

REMARKS

Claims 1-3, 6, 7, and 11-13 are pending in this application and have been rejected. The abstract has been amended to improve form. No new matter is being presented, and approval and entry are respectfully requested.

Objection To The Abstract

In item 1 on page 2 of the Office Action, the abstract was objected to as being too long. In view of the attached proposed amended abstract, the objection to the abstract should be resolved.

Rejections Under 35 U.S.C. §103(a)

In items 3-5 on pages 3-5 of the Office Action, the Examiner rejected claims 1-3, 6, 7, and 11-13 under 35 U.S.C. §103(a) as being unpatentable over Kuhara et al. (U.S. Patent No. 5,787,215) in view of Yoshida et al. (U.S. Patent No. 5,963,696). Applicants respectfully traverse this rejection for the reasons presented below.

Claim 1 of the present invention specifies that a lens-fiber assembly includes a casing (24) having a first hole (26) with a first diameter and a first axis, and a second hole (28) with a second diameter and a second axis, and that the second diameter is smaller than the first diameter and the second axis is offset from the first axis.

By using the lens-fiber assembly, which is constructed by fixing the lens and the ferrule to the casing in a given positional relationship, a laser diode (LD) module having a high optical coupling efficiency may be easily assembled and adjusted in optical axis, thereby facilitating maintenance of the positional relationship after adjustment of the optical axis.

Neither Kuhara nor Yoshida discloses or suggests the **casing** of the claimed invention, which has a first hole with a first diameter and a second hole, with a second diameter that is smaller than the first diameter, that is offset from the first hole.

The Examiner has indicated on page 3 of the Office Action that the Kuhara reference fails to disclose that the second axis is offset from the first axis. The Examiner has asserted on page 4 of the Office Action that Fig. 13 of the Yoshida reference discloses a laser diode module having a second axis that is offset from the first axis. However, the holder 16 of Yoshida has

only one axis. The sleeve 14 has another axis, but the holder 16 and the sleeve 14 are separate members, in contrast to the claimed invention as shown in Fig. 1 of the present application.

Claim 1 also specifies that a lens (36) is inserted and fixed in the first hole (26) and that a ferrule (38) is inserted and fixed in the second hole (28). In contrast, as shown in Fig. 6 of the Kuhara reference, a lens 37 is fixed to a lens holder 36 and a ferrule 39 is fixed to a conical housing 38. Also, in Fig. 21A of Kuhara, a lens 126 is fixed to a cap 124 rather than a first hole, and a ferrule 136 is set in a ferrule holder 133, which is not a second hole within the same casing containing a first hole, where the second hole has a second diameter that is smaller than the diameter of the first hole and an axis that is offset from the axis of the first hole. Similarly, as shown in Fig. 13 of the Yoshida reference, a lens 4 is fixed to a cap 7 while a ferrule 15 is inserted and fixed to a ferrule holder 16. Therefore, neither Kuhara nor Yoshida, nor the combination of Kuhara and Yoshida discloses the lens-fiber assembly of the claimed invention.

Similar to claim 1, independent claim 6 of the present invention specifies that a lens-fiber assembly includes a casing having a first hole with a first diameter and a first axis; a second hole with a second diameter and a second axis, wherein the second diameter is smaller than the first diameter and the second axis is offset from the first axis; a lens that is inserted and fixed in the first hole; and a ferrule that is inserted and fixed in the second hole. Also, independent claim 11 of the present invention specifies that a lens-fiber assembly includes a casing having a first hole and a second hole offset from the first hole, and that a lens is fixed in the first hole and a ferrule is fixed in the second hole. Therefore, for at least the reasons presented above with respect to claim 1, it is submitted that claims 6 and 11 patentably distinguish over the prior art.

As for the dependent claims, the dependent claims depend from the above-discussed independent claims and are patentable over the prior art for the reasons discussed above.

Therefore, Applicants submit that claims 1-3, 6, 7, and 11-13 patentably distinguish over the prior art. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections under §103.

CONCLUSION

It is submitted that the references, either taken alone or in combination, do not teach the present claimed invention. Thus, claims 1-3, 6, 7, and 11-13 are deemed to be in a condition

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suitable for allowance. Reconsideration of the claims and an early Notice of Allowance are earnestly solicited.

If there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

Finally, if there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 8/9/02

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE ABSTRACT

Please **REPLACE** the abstract with the following abstract:

A laser diode module including a laser diode assembly having a laser diode and a holder, a lens-fiber assembly having a lens and an optical fiber fixed in a given positional relationship, and a sleeve. The lens-fiber assembly includes a casing having a first hole and a second hole offset from the first hole. The lens is inserted and fixed in the first hole, and a ferrule in which the optical fiber is embedded is press-fitted with the second hole. The ferrule has a slant polished first end and a second end projecting from an end surface of the casing by a given distance. The lens and the ferrule are fixed in the casing so that a given distance is defined between the lens and the first end of the ferrule. [The laser diode module is assembled by first optically connecting an optical power meter to the second end of the ferrule, next moving the lens-fiber assembly relative to the laser diode along an optical axis and in the directions perpendicular to the optical axis, and finally fixing the casing through the sleeve to the holder by welding, for example, at a position where the reading on the optical power meter shows a maximum value.]